

General

Title

Pulmonary resection: percentage of patients undergoing pulmonary resection who have documentation of at least one of the specified deep venous thrombosis prophylaxis modalities after surgery.

Source(s)

Cassivi SD, Allen MS, Vanderwaerdt GD, Ewoldt LL, Cordes ME, Wigle DA, Nichols FC, Pairolero PC, Deschamps C. Patient-centered quality indicators for pulmonary resection. *Ann Thorac Surg.* 2008 Sep;86(3):927-32. [40 references] [PubMed](#)

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of patients undergoing pulmonary resection who have documentation of at least one of the following deep venous thrombosis prophylaxis modalities after surgery:

- Use of graduated elastic compression stockings
- Use of lower extremity sequential compression devices
- Administration of subcutaneous heparin

Rationale

More than 30,000 patients undergo pulmonary resection (not including diagnostic lung biopsies) each year in the United States (Memtsoudis et al., 2006). Despite this large number of surgical procedures, there remain to date no standard criteria to measure the quality of care received by patients undergoing

pulmonary resection. The general thoracic surgical team developed an a priori set of patient-centered quality of care measures, specific to patients undergoing pulmonary resection.

Prophylaxis for deep venous thrombosis has been proposed as a measure of process in various quality fora (Chyna, 2005). There has been debate, however, regarding the degree of risk of deep venous thrombosis and subsequent venous thromboembolism after some surgical procedures (Polk, 2006). Nevertheless, patients undergoing pulmonary resection, and specifically patients with lung cancer, are at a significantly increased risk of deep venous thrombosis with potentially devastating consequences when this occurs (Mason et al., 2006; Ziomek et al., 1993). Similar to mediastinal staging, many options exist for deep venous thrombosis prophylaxis. Documenting the use of at least one of the standard modalities, along with early postoperative patient ambulation, would serve as a minimum process standard.

Evidence for Rationale

Cassivi SD, Allen MS, Vanderwaerdt GD, Ewoldt LL, Cordes ME, Wigle DA, Nichols FC, Pairolero PC, Deschamps C. Patient-centered quality indicators for pulmonary resection. *Ann Thorac Surg*. 2008 Sep;86(3):927-32. [40 references] [PubMed](#)

Chyna JT. Preparing for DVT core measures. Healthcare leaders should begin preparing for new deep vein thrombosis prevention standards. *Healthc Exec*. 2005 May-Jun;20(3):66-7. [PubMed](#)

Mason DP, Quader MA, Blackstone EH, Rajeswaran J, DeCamp MM, Murthy SC, Quader AK, Rice TW. Thromboembolism after pneumonectomy for malignancy: an independent marker of poor outcome. *J Thorac Cardiovasc Surg*. 2006 Mar;131(3):711-8. [PubMed](#)

Memtsoudis SG, Besculides MC, Zellos L, Patil N, Rogers SO. Trends in lung surgery: United States 1988 to 2002. *Chest*. 2006 Nov;130(5):1462-70. [PubMed](#)

Polk HC Jr. Renewal of surgical quality and safety initiatives: a multispecialty challenge. *Mayo Clin Proc*. 2006 Mar;81(3):345-52. [PubMed](#)

Ziomek S, Read RC, Tobler HG, Harrell JE Jr, Gocio JC, Fink LM, Ranval TJ, Ferris EJ, Harshfield DL, McFarland DR, et al. Thromboembolism in patients undergoing thoracotomy. *Ann Thorac Surg*. 1993 Aug;56(2):223-6; discussion 227. [PubMed](#)

Primary Health Components

Pulmonary resection; deep venous thrombosis prophylaxis; graduated elastic compression stockings; lower extremity sequential compression devices; subcutaneous heparin

Denominator Description

All patients undergoing pulmonary resection (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Documentation of at least one of the following after surgery:

- Use of graduated elastic compression stockings
- Use of lower extremity sequential compression devices
- Administration of subcutaneous heparin

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Hospital Inpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

All ages

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

January through December

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

All patients undergoing pulmonary resection

This includes all patients undergoing pneumonectomy, lobectomy, segmentectomy, sleeve resection, and wedge resection, as well as thoracoscopic or open lung biopsy.

Exclusions

Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Documentation of at least one of the following after surgery:

- Use of graduated elastic compression stockings
- Use of lower extremity sequential compression devices
- Administration of subcutaneous heparin

Exclusions

Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Electronic health/medical record

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Deep venous thrombosis prophylaxis.

Measure Collection Name

Patient-Centered Quality Indicators for Pulmonary Resection

Submitter

Division of General Thoracic Surgery, Mayo Clinic - Nonprofit Research Organization

Developer

Division of General Thoracic Surgery, Mayo Clinic - Nonprofit Research Organization

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

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Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2008 Apr

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

Measure Availability

Source available from the [Annals of Thoracic Surgery Web site](#) .

For more information, contact Dr. Stephen Cassivi at the Mayo Clinic, 200 First St. SW, Rochester, MN, 55905; E-mail: cassivi.stephen@mayo.edu.

NQMC Status

This NQMC summary was completed by ECRI Institute on January 10, 2017. The information was not verified by the measure developer.

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Production

Source(s)

Cassivi SD, Allen MS, Vanderwaerdt GD, Ewoldt LL, Cordes ME, Wigle DA, Nichols FC, Pairolero PC, Deschamps C. Patient-centered quality indicators for pulmonary resection. Ann Thorac Surg. 2008 Sep;86(3):927-32. [40 references] [PubMed](#)

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